



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

23416 7590 02/17/2010

CONNOLLY BOVE LODGE & HUTZ, LLP  
P O BOX 2207  
WILMINGTON, DE 19899

EXAMINER

HU, HENRY S

ART UNIT

PAPER NUMBER

1796

DATE MAILED: 02/17/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/530,226

08/26/2005

Oemer Uensal

15588-00009

1035

TITLE OF INVENTION: PROTON-CONDUCTING POLYMER MEMBRANE CONTAINING POLYAZOLE BLENDS AND APPLICATION THEREOF IN FUEL CELLS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	05/17/2010

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

23416 7590 02/17/2010

CONNOLLY BOVE LODGE & HUTZ, LLP  
P O BOX 2207  
WILMINGTON, DE 19899

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/530,226 08/26/2005 Oemer Uensal 15588-00009 1035

TITLE OF INVENTION: PROTON-CONDUCTING POLYMER MEMBRANE CONTAINING POLYAZOLE BLENDS AND APPLICATION THEREOF  
IN FUEL CELLS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
-------------	--------------	---------------	---------------------	----------------------	------------------	----------

nonprovisional NO \$1510 \$300 \$0 \$1810 05/17/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
----------	----------	----------------

HU, HENRY S 1796 429-033000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,226	08/26/2005	Oemer Uensal	15588-00009	1035
23416	7590	02/17/2010	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899			HU, HENRY S	
			ART UNIT	PAPER NUMBER
			1796	
DATE MAILED: 02/17/2010				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 678 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 678 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/530,226	UENSAL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	HENRY S. HU	1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment after Final filed on 10-26-2009 and 11-20-2009.
2. ☒ The allowed claim(s) is/are 1-24 and 32-34.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with **Attorney Ashley I. Pezzner** (registration # 35,646, tel: 302 658-9141) **on December 23, 2009** to cancel non-elected Claims 25-31 and to amend Claim 32 as following:

#### Claim

**Claims 25-31**     please cancel Claims 25-31

**Claim 32** at line 2     please replace the phrase of "blends end" with "blend and"

### DETAILED ACTION

2. This Office Action is in response to a total of **three** things including: (A) **RCE** Request filed on December 23, 2009, (B) **Response** (2<sup>nd</sup> After Final) filed on November 20, 2009, and (C) **Amendment** (1<sup>st</sup> After Final) filed on October 26, 2009, which are all in response to Final

Art Unit: 1796

office action dated September 2, 2009. In summary, only the parent **Claim 1** is amended to correct the typographical error so as to use the correct language “blend and” and “obtained”, no claim is cancelled or added.

The examiner’s amendment being with the permission of Attorney **Pezzner** (see page 11 at top of Remarks) is done in two ways including: (A) to cancel the above-mentioned **Claims 25-26 (Group II) and Claims 27-31 (Group III)**, which are non-elected with traverse filed on November 20, 2008, and (B) to amend other parent Claim 32 to use the correct language “blend and” so as to be consistent with parent claim 1. Examiner **accepts Applicants’ drawing in one sheet with Figure 1** filed along with this application (a Brief Description for the drawing is on page 33). **Claims 1-24 and 32-34** with two independent claims (Claim 1 and Claim 32) are now pending. An action follows.

3. Claim rejections under **Final** Office Action filed on September 2, 2009 are now removed for the reasons given in paragraphs 4-13 thereafter.

***Allowable Subject Matter***

4. Claims 1-24 and 32-34 are allowed.

5. The following is an examiner's statement of reasons for allowance: The above Claims 1-24 and 32-34 are allowed over the closest references:

6. The limitation of “twice-amended” parent **Claim 1** of the present invention relates to a proton-conducting polymer membrane, which comprises polyazole blend and is obtained by a process (1) or (2) wherein process (1) comprising four steps including:

(A1) preparation of a mixture comprising polyphosphoric acid, at least one polyazole (polymer A) and/or one or more compounds which are suitable for forming polyazoles under the action of heat according to step (B1),

(B1) heating of mixture obtained according to step (A1) under inert gas to temperatures of up to 400°C,

(C1) application of a layer using the mixture from step (B1) to a support to form a sheet-like structure,

(D1) treating said sheet-like structure formed in step (C1) with hydrolysis until it is self-supporting,

or wherein process (2) comprising four steps including:

(A2) preparation of a mixture comprising polyphosphoric acid, at least one polyazole (polymer A) and/or one or more compounds which are suitable for forming polyazoles under the action of heat according to step (B1),

(B1) heating of mixture obtained according to step (A1) under inert gas to temperatures of up to 400°C,

(C1) application of a layer using the mixture from step (B1) to a support to form a sheet-like structure,

Art Unit: 1796

*(D1) treating said sheet-like structure formed in step (C1) with hydrolysis until it is self-supporting,*

*or wherein process (2) comprising four steps including:*

*(A2) preparation of a mixture comprising polyphosphoric acid, at least one polyazole (polymer A) and/or one or more compounds which are suitable for forming polyazoles under the action of heat according to step (C2),*

*(B2) application of a layer using the mixture from step (A2) to a support to form a sheet-like structure,*

*(C2) heating of mixture obtained according to step (B2) under inert gas to temperatures of up to 400°C,*

*(D2) treating said sheet-like structure formed in step (C2) with hydrolysis until it is self-supporting,*

*wherein at least one further polymer (polymer B) which is not a polyazole is added to the composition obtained according to step (A1) or (A2) and the weight ratio of polyazoles to polymer B is in the range from 0.1 to 50.*

Other parent **Claim 32** is directly related to the same type polymer membrane of parent **Claim 1** but using specified polymer B.

*See other limitations of dependent **Claims 2-24 and 33-34.***

7. Regarding “proton-conducting polymer “blend”membrane” limitation of two parent claims including **Claim 1** and previously added new **Claim 32**, three components are mixed



Art Unit: 1796

for heating, then applying on substrate and finally forming a self-supporting membrane. Said **three** components include: (A) a polyazole type polymer (or made from its precursor), and (B) a different polymer (other than polyazole type), and (C) polyphosphoric acid, wherein the mixing of polymer (A) and polymer (B) will eventually make a polymer blend according to the art.

8. With respect to the process used in parent **Claims 1 and 32**, the process originally presented in parent Claim 1 is rewritten into two different process including: the first process (1) and the second process (2), wherein difference between process 1 and process 2 is the sequence of the second step and the third step. In summary, parent **Claims 1 and 32** each includes: (A) to obtain the polyazole blends by process (1) or (2), and (B) the step D1 or D2 is done by step of **hydrolysis** treatment on the sheet-like structure formed on C1 or C2 so as to become self-supporting. In a very close comparison, newly added parent **Claim 32** is directly related to the same type polymer membrane of parent **Claim 1** but using specified polymer B.

9. Although **Calundan (984)** has already prepared some proton-conducting electrolyte type “polymer membranes” in two different process including process (1) and process (2) (see process (1) and process (2) in Claim 1 on column 21, line 34-65) to be particularly useful for making solid polymer electrolyte membrane/electrode assembly in **fuel cell operation** (column 1, line 11-15).

Such a polymer membrane is achieved by **dissolving polyazole type polymer in aprotic solvent such as polyphosphoric acid**, while hydrolysis treatment is indeed applied on step D1 or D2 until it is self-supporting. Additionally, other polymer (to be useful as polymer B) such as **perfluorinated polymer with sulfonic acid** (see the use of **Nafion** polymer at line 45, 0.1-20 wt%; it reads on the polymer B-(f) on new Claim 32) can be added as additives (see column 13, line 16-45) so as to improve performance for oxygen solubility and diffusion.

10. **However**, as exactly pointed out by Applicants on pages 11-12 of Remarks, **Calundan (984) cannot be treated as 102(e) prior art reference to instant Application, which is a PCT case but it is actually published in German language**. This is based on the fact that Calundan (984) is assigned to the same assignee as this application BASF Fuel Cell GmbH, while the undersigned filed an assignment on October 23, 2009 from PEMEAS GmbH to BASF Fuel Cell GmbH.

11. In a very close examination, **Calundan (984) also cannot be treated as DP or ODP reference to instant Application** as follows: The key point is that parent Claim 1 of Calundan (984) relates to some proton-conducting electrolyte type “polymer membranes” can be prepared in two process including process (1) and process (2) (see column 21, line 34-65) to be useful for making solid polymer electrolyte membrane/electrode assembly in **fuel cell operation** (column 1, line 11-15). Such a polymer membrane is achieved by **dissolving polyazole type polymer in aprotic solvent such as polyphosphoric acid**, while hydrolysis treatment is indeed applied

Art Unit: 1796

on step D1 or D2 until it is self-supporting. However, Calundan (984)'s parent Claim 1 does not require the addition of other polymer in the amount of 0.1-50 wt%.

12. In summary, instant Application is dealing with a polymer blend (made from polyazole and other polymer) to be mixed with polyphosphoric acid, while Calundan (984) is only dealing with a polyazole polymer to be mixed with phosphoric acid. Based on the fact that **a polymer's property will not fully shown in its polymer blend, the resulting polymer electrolyte membrane will behave at least somewhat different.** All the above-mentioned references, in combination or alone, does not teach or fairly suggest the limitations of present invention. Therefore, instant Application is novel and not obvious.

13. After further examination and search, the examiner found the following prior art did not teach the claimed limitation:

US 4,141,800 to Breuer et al. only has disclosed the making of **multiple-layered membrane** to be useful as **filter membrane for gas detector**. Solid organic acid such as phenol-2,4-disulfonic acid is doped in the membrane in this purpose (see Table 2 at column 4, line 53—column 5, line 7). **No polyphosphoric acid is applied at all.** Additionally, **no polyazole type polymer is mentioned.** Therefore, Breuer et al. fail to teach or fairly suggest the membrane limitations of Claims 1 and 32 in present application.

14. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, the **two** independent composition **Claims 1 and 32** are allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending dependent **Claims 2-24 and 33-34** are passed to issue.

15. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu whose telephone number is (571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Vasu Jagannathan, can be reached on (571) 272-1119. The **fax** number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to

Application/Control Number: 10/530,226

Page 10

Art Unit: 1796

the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Peter D. Mulcahy/  
Primary Examiner, Art Unit 1796

/Henry S. Hu/  
Examiner, Art Unit 1796

February 12, 2010